This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (previously presented) A method of coordinate control of movements in the upper airway during swallowing in a subject, comprising:

a) implanting at least two different intramuscular stimulators into a thyrohyoid muscle and at least one other hyoid muscle involved in the upper airway and vocal tract of the subject,

b) implanting signal generator in the subject that generates electrical pulses to the at least two intra-muscular stimulators at a frequency of about 10 to 75 Hz;

wherein electrical pulses from the signal generator activate the at least two different muscles to produce the coordinate movement control during swallowing.

2. (previously presented) The method of claim 1, wherein at least two different muscles are chronically implanted and the coordinate control comprises enhancing a portion of the complex pattern of movements, or producing a portion of the complex pattern of movements.

3. (previously presented) The method of claim 1, wherein the at least one hyoid muscle is selected from the group consisting of at least one mylohyoid muscle, one hyoglossus, at least one geniohyoid muscle, and combinations thereof.

4. (previously presented) The method of claim 1, wherein the signal generator generates electrical pulses to the at least two intramuscular stimulators in a manner suitable for initiating movements in a subject delayed in initiating movement during swallowing.

5. (previously presented) The method of claim 1, wherein the signal generator generates electrical pulses to the at least two intramuscular stimulators in a manner suitable for augmenting movement in a subject with limited range and speed of movement during swallowing.

6. (previously presented) The method of claim 1, wherein the muscles protect the airway during food ingestion.

7. (previously presented) The method of claim 1, wherein the muscles protect the airway during food ingestion by raising the hyo-larynx to reduce the entry to the vestibule

8. (previously presented) The method of claim 1, wherein the muscles raise the hyo-larynx and/or open the upper esophageal sphincter.

9. (previously presented) The method of claim 1, further comprising a switch located outside the subject's body and operable by the subject, wherein the switch activates the implanted signal generator to control either the onset and/or offset of stimulation of the at least two implanted stimulators.

10. (previously presented) The method of claim 1, further comprising a switch located outside the subject's body and operable by the subject, wherein the switch activates the implanted signal generator to control intramuscular stimulation to prevent aspiration during swallowing.

11-12. (cancelled)

13. (previously presented) A method of moving the hyoid bone, and/or parts of the upper airway within an animal by two or more different controlled muscles, comprising:

a) implanting at least one electrode into each of two or more different muscles, wherein one of the muscles is the thyrohyoid and the other muscle of the two or more different muscles is a hyoid muscle;

b) electrically connecting each electrode to an indwelling subcutaneous signal generator capable of generating a pattern of stimulation; and

c) energizing the controlled muscles at the same time with a signal of about 10 to 75 Hz by the signal generator to synergistically move the parts of the upper airway, or hyoid bone.

14. (previously presented) The method of claim 13, wherein the animal is a human and step c) is carried out by operating a switch under conscious control of the human.

15. (previously presented) The method of claim 13, wherein the hyoid muscle is selected from the group consisting of the mylohyoid muscles, the hyoglossus,the geniohyoid muscles, and combinations thereof.

16. (original) The method of claim 13, wherein the hyoid bone is moved by simultaneous stimulation of at least one mylohyoid muscle, hyoglossus and at least one geniohyoid muscle.

17. (previously presented) A method of simultaneously moving the hyoid bone and larynx and opening the upper esophageal sphincter within an human via at least one muscle attached to the hyoid bone, comprising:

implanting at least one electrode into each of two or more said muscles;

electrically connecting each electrode to a signal generator capable of generating a complex pattern to activate the muscle attached to the electrode; and

energizing electrodes in at least two of the muscles at the same time at a frequency of 10 to 75 Hz with the signal generator, thereby synergistically moving the hyoid bone and/or opening the upper esophageal sphincter.

18. (original) The method of claim 17, wherein one or more of the electrodes are Peterson-like electrodes.

19. (previously presented) A method of compensating for variations in electrode placement when stimulating two or more muscles to effect a coordinated bone, sphincter, structure, tissue or cartilage movement in the hypopharynx, or upper airway movement, comprising:

a) implanting a first electrode in a thyrohyoid muscle;

b) implanting a second electrode in at least one hyoid muscle;

c) stimulating the first electrode and determining the effect of stimulation on movement of the bone, sphincter, tissue, structure or cartilage;

d) stimulating the second electrode implanted in the tissue and determining the effect of stimulation on movement of the bone, sphincter, tissue, structure or cartilage; and comparing the effects from c) and d) to determine an optimum coordination of signals to the first and second

electrodes to obtain a desired direction and strength of the bone, sphincter, tissue, structure or cartilage movement.

20. (original) The method of claim 19, wherein the strength and timing of the electrical signal to at least one of the electrodes implanted in the tissue is altered to compensate for the effect of electrode placement on the induced movement.

21. (currently amended) A system for coordinating the onset and offset of two or more different electrical signals to electrodes implanted in tissue used to coordinately control a bone, sphincter, tissue, structure or cartilage movement in the hypopharynx, or upper airway to protect the airway, the system comprising:

a controller with a stored program that directs a signal generator to send electrical pulses to each of at least two electrodes in a ~~the~~ determined pattern, wherein the determined pattern of electrical pulses coordinates the onset and offset of two or more different electrical signals to the at least two electrodes to protect the airway, each signal sent to a different electrode implanted in the tissue,

the implantable signal generator comprising a processor, wherein the processor is configured to deliver an electrical signal to each of the electrodes at overlapping time periods that are selected to induce muscle contractions in the different muscles at overlapping or identical times,

~~the~~ at least two intramuscular electrodes suitable for implantation in a muscle in the hypopharynx, or upper airway ~~operably connected to the signal generator~~,

a switch located external to the body and configured to be activated by a human, wherein the switch is configured to communicate to the signal generator upon activation by the human, and

a sensor device;

wherein the controller under the direction of the stored program directs the signal generator to coordinate the onset and offset of two or more different electrical signals to activate each of the intra-muscular electrodes to move the bone, sphincter, tissue, structure or cartilage to protect the airway.

22. (original) The system of claim 21, wherein one signal generator is used to control all electrodes, and the sensor device is configured to measure[[s]] the movement of a body part.

23. (original) The system of claim 21, wherein movement of either the hyoid bone, the thyroid prominence, the larynx, the upper esophageal sphincter, upper airway or vocal tract are transduced.

24. (currently amended) A system for moving a cartilage within a subject [[an]] ~~animal~~, comprising:

an implantable signal generator comprising a power source and a processor;

a first electrode implantable ~~implanted~~ in a first hyo-laryngeal muscle attached to the cartilage and operably connected to the [[a]] signal generator;

a second electrode implantable ~~implanted~~ in a second different hyo-laryngeal muscle attached to the same cartilage and operably connected to the signal generator; and

a switch located external to the body and configured to be activated by the subject, wherein the switch is configured to communicate to the signal generator upon activation by the subject;

wherein the processor ~~signal generator~~ is configured to ~~implanted and~~ generate[[s]] a signal of about 10 to 75 Hz to each of the first and second electrodes at the same time~~; and~~

~~a switch operable by the animal that controls the signal generator;~~

~~wherein the signal from the signal generator energizes the first and second implanted hyo laryngeal muscles~~ and to effect a swallow elevation and laryngeal movement velocity ~~coordinated movement~~ in the cartilage that exceeds swallow elevation and laryngeal movement velocity ~~the movements~~ made by pulses sent to the muscles at separate times.

25. (cancelled)

26. (original) The system of claim 24, wherein the cartilage is a laryngeal cartilage.

27. (original) The system of claim 24, wherein the cartilage is the thyroid cartilage.

28. (currently amended) A system for control of stimulation during swallowing of a human with dysphagia comprising:

at least two intra-muscular electrodes;

an implantable signal generator connected to the at least two electrodes and that comprises a processor configured to control the ~~that~~ output[[s]] energy to the electrodes according to a determined pattern,

a controller with a stored program that directs the signal generator to send electrical pulses to each of the at least two electrodes in the determined pattern, wherein the determined pattern of electrical pulses comprises a frequency of about 10 to 75 Hz and moves at least two different muscles that control hyoid bone movement so that the hyoid bone moves ~~forward and~~ up at least 80% of the elevation of a normal swallow, and ;

a power supply that provides energy for the signal generator;

a sensor configured to detect physiological movement; and

a switch operable by the human that controls the signal generator, wherein the operation of the switch by the human activates the controller to direct the signal generator to send electrical pulses to each of the at least two electrodes in the determined pattern.

29. (original) The system of claim 28, wherein the intramuscular electrodes are Peterson-like electrodes.

30. (cancelled)

31. (original) The system of claim 28, wherein the signal generator and power supply are provided within the same implant.

32. (cancelled)

33. (previously presented) The system of claim 28, further comprising a weak muscle contraction signal detection circuit comprised of:

an electrode embedded in a muscle used for swallowing;

an electrical lead from the embedded electrode to a signal processor to recognize a detected weak signal indicating a desire to swallow;

a trigger input to the controller from the signal processor upon recognition of the detected signal; and

a stored program in the controller that directs the signal generator to output muscle contraction signals through electrodes to the at least two muscles in response to recognition of the detected weak signal.

34. (original) The system of claim 33, wherein the electrode embedded in a muscle used for swallowing also is used for stimulating the muscle.

35. (previously presented) The system of claim 28, wherein at least two different muscles are selected from the group consisting of the intrinsic laryngeal muscle(s), the extrinsic laryngeal muscle(s), the bilateral mylohyoid muscle(s), the bilateral thyrohyoid muscle(s), the bilateral geniohyoid muscle(s), the unilateral mylohyoid muscle(s), the unilateral geniohyoid muscle(s), the unilateral thyrohyoid muscle(s), the unilateral thyroarytenoid muscle(s), and the bilateral thyroarytenoid muscle(s).

36.-43 (cancelled)

44. (currently amended) The system of claim 28, ~~wherein the system further comprises an embedded sensor that detects physiological movement, and~~ wherein the controller also has a stored program that directs the signal generator to send a reference signal to each of the at least two electrodes embedded in muscle.

45. (previously presented) The system of claim 28, wherein the stored program directs the signal generator to send the signal to each of the at least two electrodes embedded in muscle at overlapping times.

46. (previously presented) The system of claim 45, wherein the stored program directs the signal generator to send the signal to each of the at least two electrodes embedded in muscle at the same time.

47. (previously presented) The system of claim 28, wherein the stored program directs the signal generator to send a signal with a complex wave form.